



SGAIM SSMIG SSGIM

Schweizerische Gesellschaft für Allgemeine Innere Medizin  
Société Suisse de Médecine Interne Générale  
Società Svizzera di Medicina Interna Generale  
Swiss Society of General Internal Medicine

**smarter**medicine

# Top-5 Recommendations “SMARTER MEDICINE IN THE HOSPITAL”

Annual Congress SGAIM  
Basel, May 25<sup>th</sup> 2016

## Top-5-list

The SSGIM's Top Five recommendations for treatments/tests to be avoided in ambulatory care are:



**1** Obtaining imaging studies during the first six weeks in patients with non-specific low back pain.

**2** Performing the Prostate Specific Antigen (PSA) test to screen for prostate cancer without a discussion of the risks and benefits.

**3** Prescribing antibiotics for uncomplicated upper respiratory tract infections.

**4** Obtaining preoperative chest radiography in the absence of a clinical suspicion for intrathoracic pathology.

**5** Continuing long-term treatment of gastrointestinal symptoms with proton pump inhibitors without titrating to the lowest effective dose needed.

**smarter**medicine

# Smarter Medicine in the Hospital

## Objectives

- Generate a list of **5 low-value interventions** which, according to the available evidence, may not provide any meaningful benefit and may carry the risk of generating harms.
- Publish & distribute this list to discourage the use of these interventions.
- Implement “Smarter Medicine in the Hospital” in medical education and practice to contribute to the efforts of fostering better patient quality of care.

# Working Group “Smarter Medicine in the Hospital”



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# Smarter Medicine in the Hospital

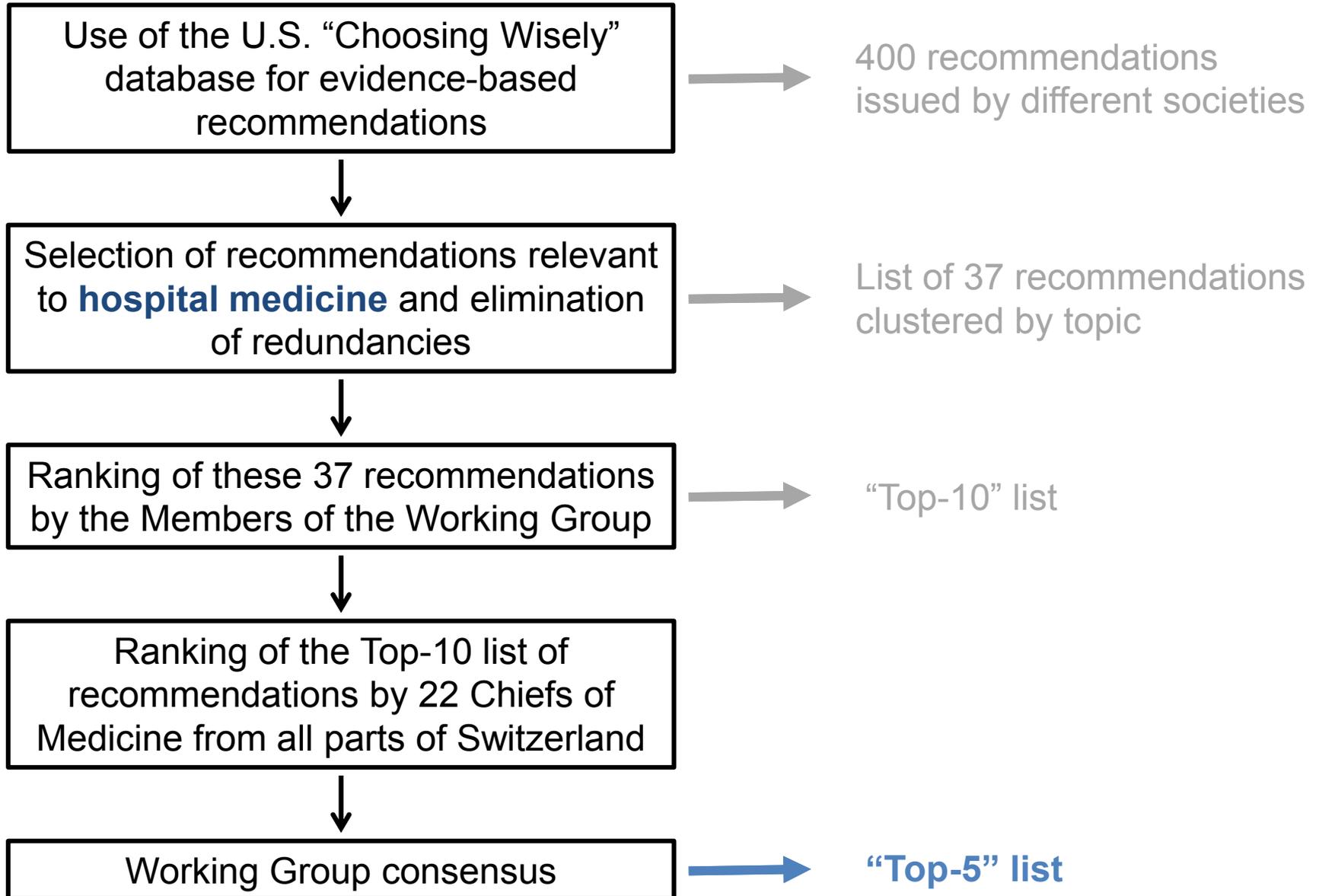
## Selection Process for Top-5

Criteria for selection:

- Evidence level
- Estimated frequency
- Risks & benefits for patients
- Possibility to influence practice

N.B.: such a selection process has an inherently arbitrary component with regard to which recommendations are considered to be 'important'.

# Selection Process for Top-5



# Smarter Medicine in the Hospital

## Recommendation #1

**Don't order blood tests at regular intervals (such as every day) or routine extensive lab panels including X-rays without specific clinical questions.**

Many diagnostic studies are ordered at regular intervals (e.g. daily). Compared with a practice of ordering tests only to help answer clinical questions, the routine ordering of tests increases health care costs, does not benefit patients and may in fact harm them. Potential harms include anemia due to unnecessary phlebotomy, which may necessitate risky and costly transfusion, and the aggressive work-up of incidental and non-pathological results found on routine studies.

Sources : the American Association of Critical-Care Nurses, the American College of Chest Physicians, the American Thoracic Society and the Society of Critical Care Medicine & CH expert panel

Evidence level : Before-After studies, Randomized Controlled Trials, Meta-analyses

# Rationale – Recommendation #1

Unnecessary blood draws may cause harm contribute to:

- Pain and discomfort for the patient, incl. psychological
- Risk of generating false positive results

Red herrings leading to further unnecessary procedures and treatments

- The Dracula syndrome

Excessive phlebotomy decreases patients' hemoglobin levels and can result in hospital-acquired anemia which has been associated with increased length of stay and need for blood transfusions.

- Unnecessary costs

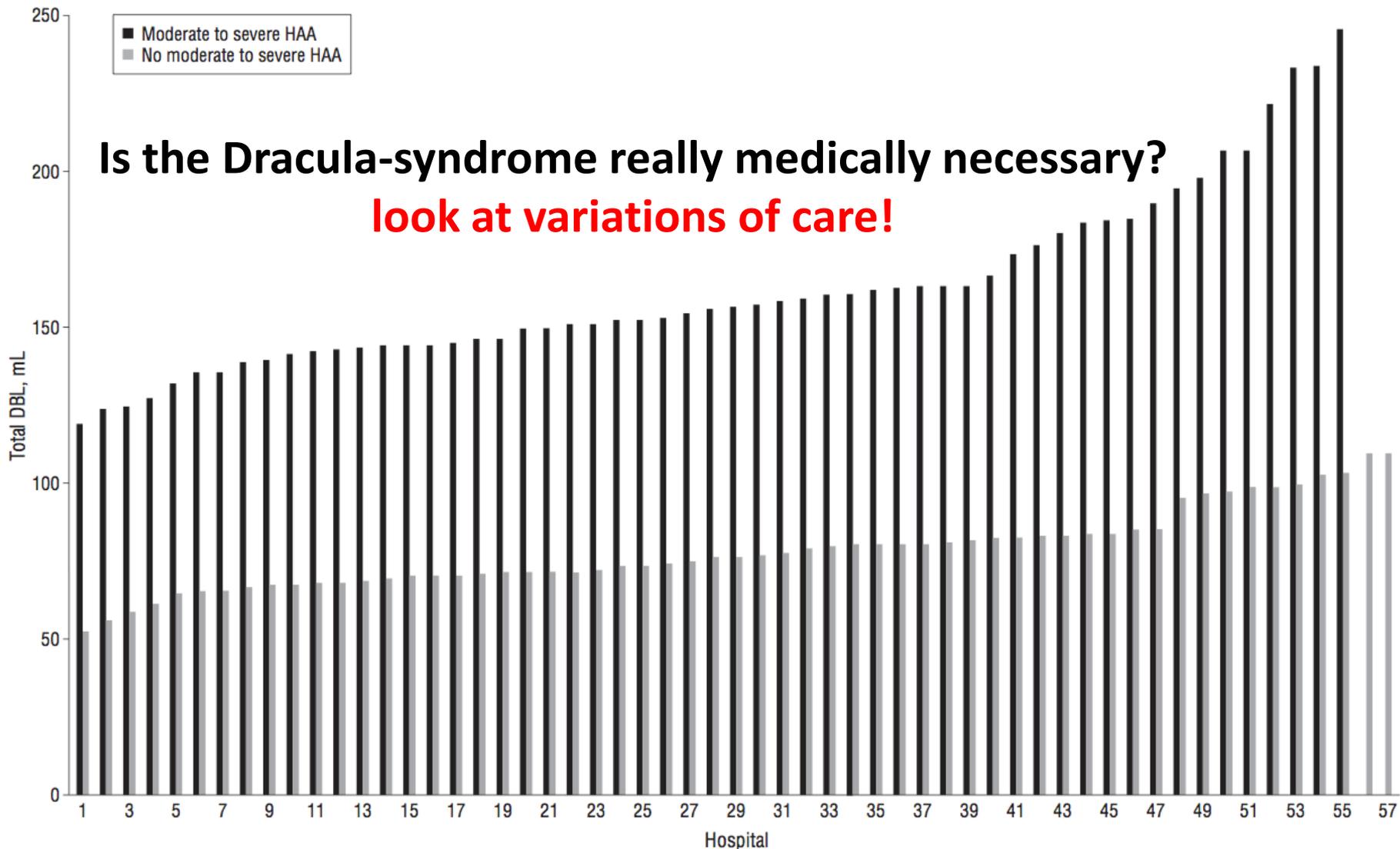
ONLINE FIRST | LESS IS MORE

# Diagnostic Blood Loss From Phlebotomy and Hospital-Acquired Anemia During Acute Myocardial Infarction

Adam C. Salisbury, MD, MSc; Kimberly J. Reid, MS; Karen P. Alexander, MD; Frederick A. Masoudi, MD, MSPH; Sue-Min Lai, PhD, MS, MBA; Paul S. Chan, MD, MSc; Richard G. Bach, MD; Tracy Y. Wang, MD, MHS, MSc; John A. Spertus, MD, MPH; Mikhail Kosiborod, MD

20% of patients with acute MI develop moderate to severe hospital-acquired anemia (Hb <11 g/dl):

63 ml for chemistry  
39 ml for hematology  
29 ml for coagulation studies  
20 ml for blood cultures  
20 ml for ABGA

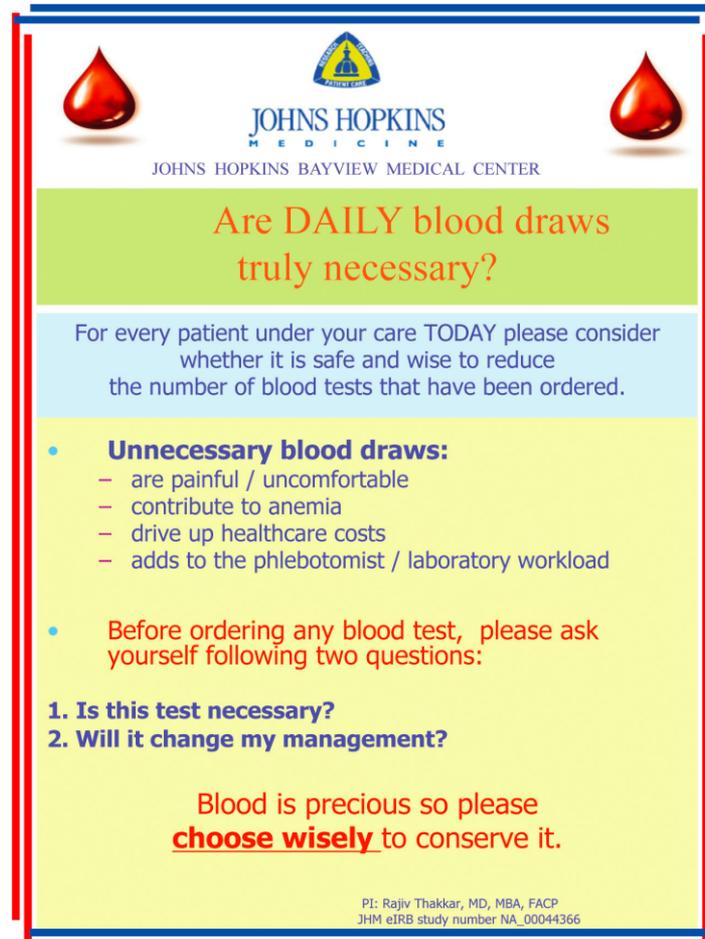


**Figure 2.** Variation in mean diagnostic blood loss (DBL) across the 57 hospitals included in a contemporary acute myocardial infarction database (Cerner Corp's Hospital Facts database.) Bars represent shrinkage estimates of the mean DBL for patients' entire hospitalizations across each hospital. Black bars represent the mean value for patients with moderate to severe hospital-acquired anemia (HAA), and gray bars present the mean value for patients without moderate to severe HAA. Hospitals are plotted on the x-axis from the hospital with the smallest mean blood loss to the hospital with the largest, ranked separately among those with moderate to severe HAA and without moderate to severe HAA.

# Eliminate unnecessary tests and procedures

## How to do it?

- Active educational intervention (eg. interactive didactic presentations, discussions, educational flyers, weekly email communications)



The flyer features the Johns Hopkins Medicine logo at the top center, flanked by two red blood drop icons. Below the logo is the text 'JOHNS HOPKINS BAYVIEW MEDICAL CENTER'. The main heading is 'Are DAILY blood draws truly necessary?' in orange text on a green background. The body text is on a light blue background, asking healthcare providers to consider if daily blood draws are safe and wise. A yellow background section contains a list of reasons why unnecessary blood draws are problematic and two key questions to ask before ordering a test. The flyer concludes with a message to 'choose wisely' to conserve blood.

**JOHNS HOPKINS**  
MEDICINE  
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

**Are DAILY blood draws truly necessary?**

For every patient under your care TODAY please consider whether it is safe and wise to reduce the number of blood tests that have been ordered.

- **Unnecessary blood draws:**
  - are painful / uncomfortable
  - contribute to anemia
  - drive up healthcare costs
  - adds to the phlebotomist / laboratory workload
- Before ordering any blood test, please ask yourself following two questions:
  1. **Is this test necessary?**
  2. **Will it change my management?**

Blood is precious so please **choose wisely** to conserve it.

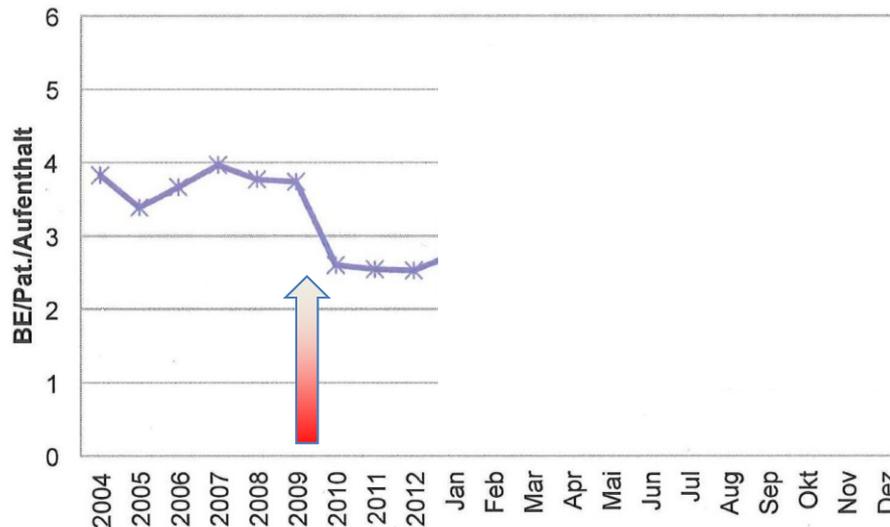
PI: Rajiv Thakkar, MD, MBA, FACP  
JHM eIRB study number NA\_00044366

# Eliminate unnecessary tests and procedures

## How to do it?

- Active educational intervention (e.g. interactive didactic presentations, discussions, educational flyers, weekly e-mail communications)
- Regular audit and feedback of performance data:

**Average blood draws per patient  
at the Triemli hospital**

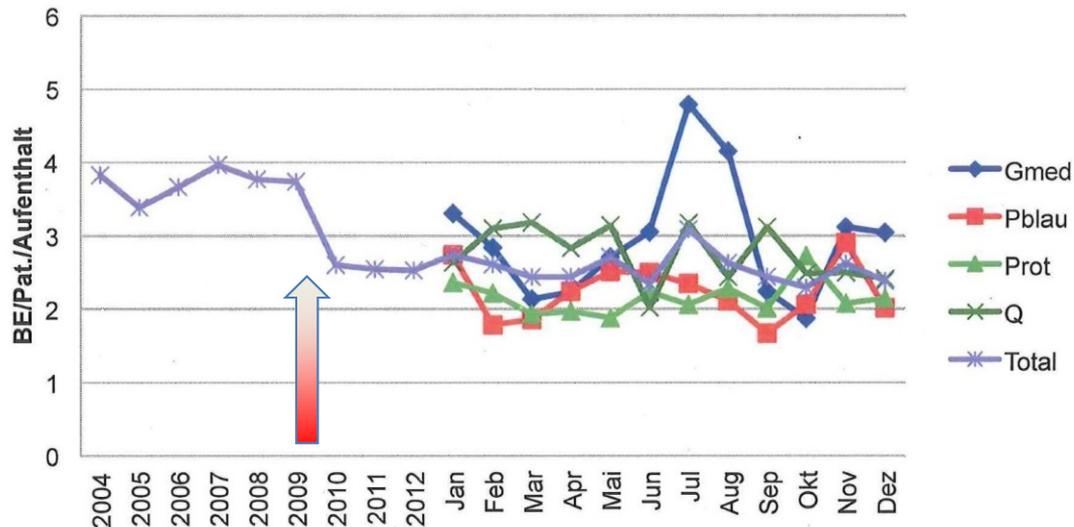


# Eliminate unnecessary tests and procedures

## How to do it?

- Active educational intervention (e.g. interactive didactic presentations, discussions, educational flyers, weekly e-mail communications)
- Regular audit and feedback of performance data

**Average blood draws per patient  
at the Triemli hospital**



# Eliminate unnecessary tests and procedures

## How to do it?

- Active educational intervention (eg. interactive didactic presentations, discussions, educational flyers, weekly email communications)
- Regular audit and feedback of performance data
- Computer-based order entry system with reminders of appropriate indications to help for decision support
- Development of guidelines for appropriateness of laboratory test orderings

# Smarter Medicine in the Hospital

## Recommendation #2

**Don't place, or leave in place, urinary catheters for incontinence, convenience or monitoring of output for non-critically ill patients.**

Catheter Associated Urinary Tract Infections (CAUTIs) are the most frequently occurring health care acquired infection (HAI). Use of urinary catheters for incontinence or convenience without proper indication or specified optimal duration of use increases the likelihood of infection and is commonly associated with greater morbidity, mortality and health care costs. Published guidelines suggest that hospitals and long-term care facilities should develop, maintain and promulgate policies and procedures for recommended catheter insertion indications, insertion and maintenance techniques, discontinuation strategies and replacement indications.

Sources: The Society of Hospital Medicine & CH expert panel

Evidence level: IDSA Guidelines, Randomized Controlled Trials, Before-After and Prospective studies, Meta-analyses

# Rationale – Recommendation #2

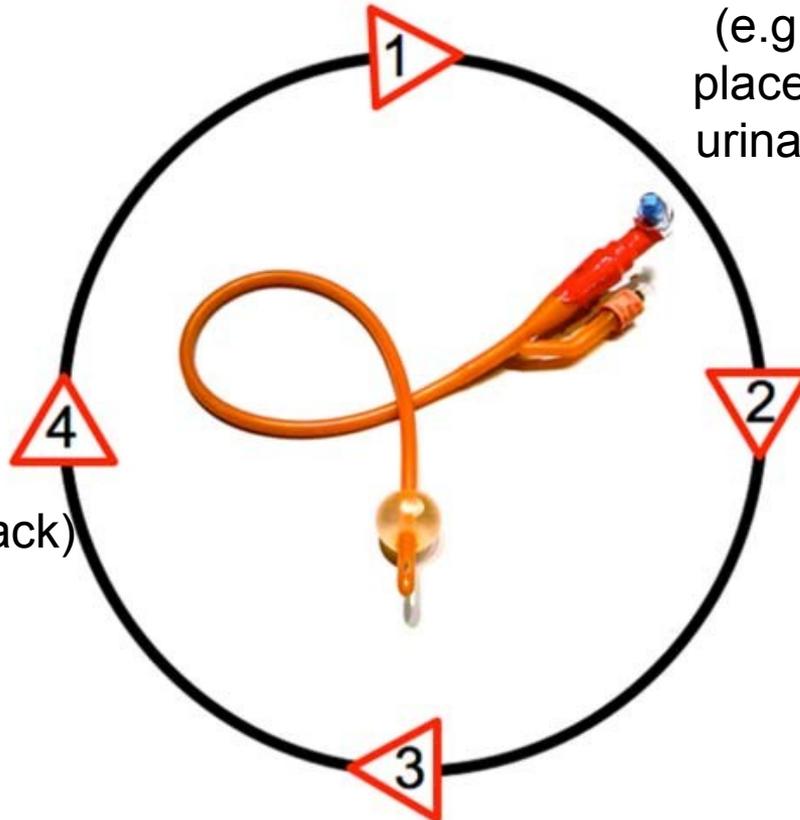
- Urinary catheters are often placed without proper indication or physician awareness and are not removed when no longer necessary.
- The duration of catheterization is the most important risk factor for the development of catheter-associated urinary tract infection (CAUTI).
- CAUTI is the most frequent health care-associated infection worldwide.

# Prevention of CAUTIs

## Disrupting the urinary catheter lifecycle

### Prevent Unnecessary and Improper Placement

(e.g. education, catheter placement restrictions and urinary retention protocols)



### Prevent Catheter Replacement

(surveillance and feedback)

### Maintain Awareness and Proper Care of Catheters in Place

(e.g. education regarding UC maintenance or bladder bundle of interventions)

### Prompt Catheter Removal when no longer needed

(eg. daily reminders or stop orders)

# Early Catheter Removal

## Efficacy & cost savings

14 studies (2 RCTs, 12 pre-post studies)

- the mean duration of catheterization decreased by 37%
- significant **reduction in catheter use** and **CAUTI rate by 52%**
- no evidence of harm (such as re-insertion)

Meddings J et al., Systematic Review and Meta-Analysis: Reminder Systems to Reduce CAUTI in Hospitalized Patients, CID 51(5): 550-60



### **Direct medical cost savings:**

Each episode of CAUTI is estimated to cost ~\$900, and ~ \$3000 with associated bacteremia.

# Smarter Medicine in the Hospital

## Recommendation #3

**Don't transfuse more than the minimum number of red blood cell (RBC) units necessary to relieve symptoms of anemia or to return a patient to a safe haemoglobin range (7 g/dL in stable non-cardiac patients and 8 g/dL in stable patients with pre-existing cardiovascular disease).**

Transfusion of the smallest effective dose of RBCs is recommended because liberal transfusion strategies do not improve outcomes when compared to restrictive strategies. Unnecessary transfusion generates costs and exposes patients to potential adverse effects without any likelihood of benefit. Clinicians are urged to avoid the routine administration of 2 units of RBCs if 1 unit is sufficient.

Sources: The American Society of Hematology & CH expert panel

Evidence level: Randomized Controlled Trials, Guidelines, Meta-analysis

# Rationale – recommendation #3

## Pros

- Anemia is highly prevalent in critically ill patients
- Restore O<sub>2</sub> carrying + circulating volume
- Decrease risk of damage to vital organs
- No cost - effective alternative for rapidly increasing the hemoglobin level

## Cons

- Transfusion associated with adverse events :
  - Infection, hemolytic reaction
  - Prolonged hospital stay in critically ill patients
  - Death and organ failure
- Expensive (\$200-300 per unit)
- Limited resource

# Overall Survival is Not Reduced with Restrictive Transfusion in **ICU Patients**

	<b>*TRICC Study</b>			<b>**TRISS Study</b>		
	838 euvolemic ICU patients with Hb<9g/dL			908 patients with septic shock with Hb<9g/dL		
	<b>Restrictive</b>	<b>Liberal</b>		<b>Restrictive</b>	<b>Liberal</b>	
# of Patients	418	420		502	496	
60-90 day Mortality						
Hospital Mortality	22.2%	28.1%	<b>0.05</b>			

**\*43% and \*\*14.9% of patients with chronic cardiovascular diseases**

Hébert PC et al., N Engl J Med 1999  
340(6):409-17

Holst LB et al., N Engl J Med 2014  
371(15):1381-91

# Mortality is Not Increased with Restrictive Transfusion after **non-cardiac and cardiac surgery**

	<b>*FOCUS Study</b> 2016 patients with hip surgery			<b>TRACS Study</b> 502 patients, cardiac surgery		
	<b>Restrictive</b>	<b>Liberal</b>		<b>Restrictive</b>	<b>Liberal</b>	
# of Patients	1009	1007		249	253	
30 day Mortality						
Hospital Mortality	1.4%	2.0%	NS			

**\*History of or risk factors for cardiovascular disease**

Carson JL et al., N Engl J Med 2011  
365(26):2453-62

Hajjar LA et al., JAMA 2010  
304(14):1559-67

# Overall Survival May Be Improved with Restrictive Transfusion in Patients with Upper GI Bleeding

921 GI bleed patients\*

Restrictive

Liberal

# of Patients

461

460

6-weeks survival

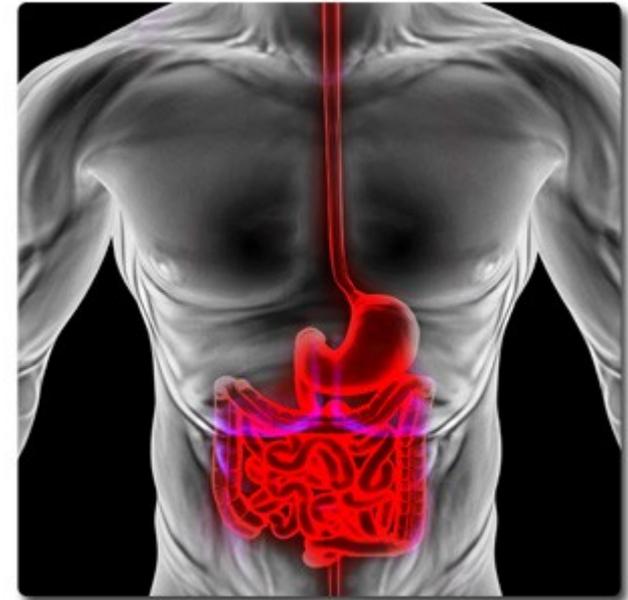
$p = 0.02^*$

Bleeding

10%

16%

$p = 0.01^*$



\* mainly in patients with cirrhosis

Villanueva C et al., N Engl J Med 2013; 368:11-21

Jairath V et al., Lancet, 2015; 386(9989):137-44

# Transfusion Thresholds: Summary of the Evidence based on meta-analyses



**7g/dl**

- Hospitalized patients
- GI bleeding

**8g/dl**

- Cardiac and non-cardiac surgery

Overall mortality is not adversely affected and use of fewer RBC transfusions reduces cost and risks for adverse effects of transfusion.

**10g/dl**

- Symptomatic patients with ischemia, tachycardia
- Acute

Decision to transfuse should not be based only on hemoglobin level but should incorporate individual patient characteristics and symptoms.

# Smarter Medicine in the Hospital

## Recommendation #4

**Don't let older adults lie in bed during their hospital stay. In addition, individual therapeutic goals should be established considering the patients' values and preferences.**

**Up to 65% of older adults who are independent in their ability to walk will lose their ability during a hospital stay.** Walking during the hospital stay is critical for maintaining functional ability in older adults. **Loss of walking independence increases the length of hospital stay, the need for rehabilitation services, new nursing home placement, risk for falls both during and after discharge from the hospital and increases the risk of death for older adults.** Bed rest or limited walking (only sitting up in a chair) during a hospital stay causes deconditioning and is one of the primary factors for loss of walking independence in hospitalized older adults.

Sources: The American Academy of Nursing & CH expert panel

Evidence level: Before-After and Prospective studies, Expert Consensus

# Rationale – recommendation #4

- Adults over 65 years account for 60% of all hospital admissions and experience consequential adverse outcomes directly related to hospitalization (eg. falls, delirium and functional decline)<sup>1</sup>.
- Older hospitalized patients spend most of their time lying in bed, despite an ability to walk independently. **43 min** is the median time a hospitalized elderly patient spends standing or walking daily<sup>2</sup>.
- **New walking dependence affect up to 60%** of hospitalized older patients and may **occur after as fast as 2 days of bed rest**<sup>1,3</sup>.
- The cost for additional medical and long term care support for newly disabled older adults in the United States is estimated at \$26 billion/year<sup>4</sup>.

1 Doherty-King B and Bowers B, The Gerontologist 2011; 51(6):786-97

2 Brown CJ et al., Journal of the American Geriatric Society 2009; 57(9):1660-5

3 Hirsch C et al., Journal of the American Geriatric Society 1990; 38(12):1296-303

4 American Academy of Nursing (Choosing Wisely campaign)

# Impact of loss of independent ambulation on the elderly hospitalized patients

- Caregiver burden and higher resource use
- Increased length of hospital stay
- Falls during and after hospitalization
- Nursing home admissions
- Mortality



# Deconditioning effects of bed rest is one of the most predictable cause for newly acquired ambulation deficits in older patients

- After 10 days of bed rest, healthy older adults lose 1 kg of muscle mass from their legs<sup>5</sup> with 2-5%/day loss of muscle strength<sup>6</sup>.
- Bed rest promoted overall declines in muscle mass, muscle strength, and physical function in older individuals<sup>5,7</sup>.

<sup>5</sup> Kortebein P et al., J Gerontol A Biol Sci Med Sci 2008; 63(10):1076-81

<sup>6</sup> Gillis A and MacDonald B, Canadian Nurse 2005; 101(6):16-20

<sup>7</sup> Coker RH et al., J Gerontol A Biol Med Sci 2015; 70(1):91-6

# Effect of 10 days of bed rest on changes in regional body composition, muscle strength, and functional status in older individuals

Total Group - Pre

Total Group - Post

Five-minute walk (m)  
Walking speed (m/s)  
Chair stand (s)

# Strategies to maintain and improve functioning in elderly patients



- **Promote Ambulation**  
(low beds without rails, carpeting, encouragement and assistance, minimization of "tethers")
- **Reality orientation**  
(clocks, calendars, dressing and undressing, communal dining)
- **Increased sensory stimulation**  
(proper lighting and decorating, newspapers and books)
- **Functional change**  
(Primary care concept with nurses as central caregivers, resources, unit activity/expectations, sharing of objectives, family participation)

# Consequences of improving patient care and systems of care to prevent loss of independence



Older adults who walk during their hospital stay

- are able to walk farther by discharge
- are discharged from the hospital sooner
- have improvement in their ability to independently perform basic activities of daily living (eg. bathing, dressing, toileting and eating)
- have a faster recovery rate after surgery
- are satisfied with being engaged in a walking program during their hospitalization stay

# Smarter Medicine in the Hospital

## Recommendation #5

**Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium and avoid prescription at discharge.**

Large-scale studies consistently show that the **risk of car crashes, falls, and hip fractures** leading to hospitalization and death can **more than double** in older adults taking benzodiazepines and other sedative-hypnotics. **Older patients**, their caregivers, and their providers **should recognize these potential harms** when considering treatment strategies for insomnia, agitation, or delirium. **Use** of benzodiazepines should be **reserved for alcohol withdrawal symptoms/delirium tremens** or severe **generalized anxiety disorders** unresponsive to other therapies.

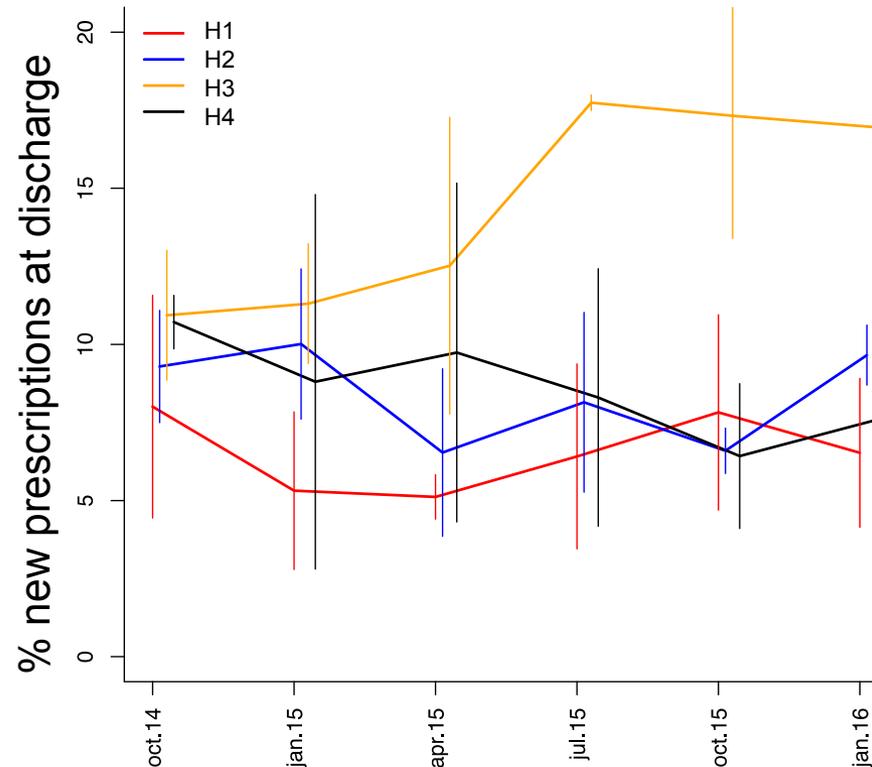
Sources: The American Geriatrics Society, The American Academy of Sleep Medicine, CH expert panel

Evidence level: Meta-analysis, Randomized Controlled Trials, Retrospective Cohort Studies, Guidelines

# Rationale – recommendation #5

Benzodiazepines (BZDs) are commonly prescribed and are often used, on a long-term basis, to treat in the elderly population sleep disorders and anxiety<sup>1</sup>.

***Observational Study on new BZDs prescriptions at discharge, Internal Medicine Services, 4 regional hospitals, N: 15'372, 18 Months (oct 2014 - march 2016)***  
***Prevalence of BZDs treatment at admission 35 ± 2 %***



# Rationale – recommendation #5

- BZDs are considered as one of the **risk factors for falls and fractures** which lead, especially for the aging population, to **increased mortality and disability**<sup>2</sup>.
- **29 %** of community-dwelling older adults **experience a fall each year** due to multiple factors (poor balance, effects of medication, sleep problems, etc)<sup>3</sup>.
- The **cost of BZD-associated fall injuries in Europe** has recently been estimated as €1.5–2.2 billion per year<sup>4</sup>.



2 Allain H et al., Drugs Aging 2005; 22(9):749-65

3 Stone KL et al., Sleep Medicine 2008; 9 Suppl 1:S18-22

4 Panneman MJ et al., Drugs Aging 2003; 20(11):833-9

# BZD use is associated with a significant increase in the risk of fractures in the elderly population

Adapted from Xing D et al., Association between use of benzodiazepines and risk of fractures: a **meta-analysis**, Osteoporos Int 2014

**25 studies** (19 case – control and 6 cohort studies)

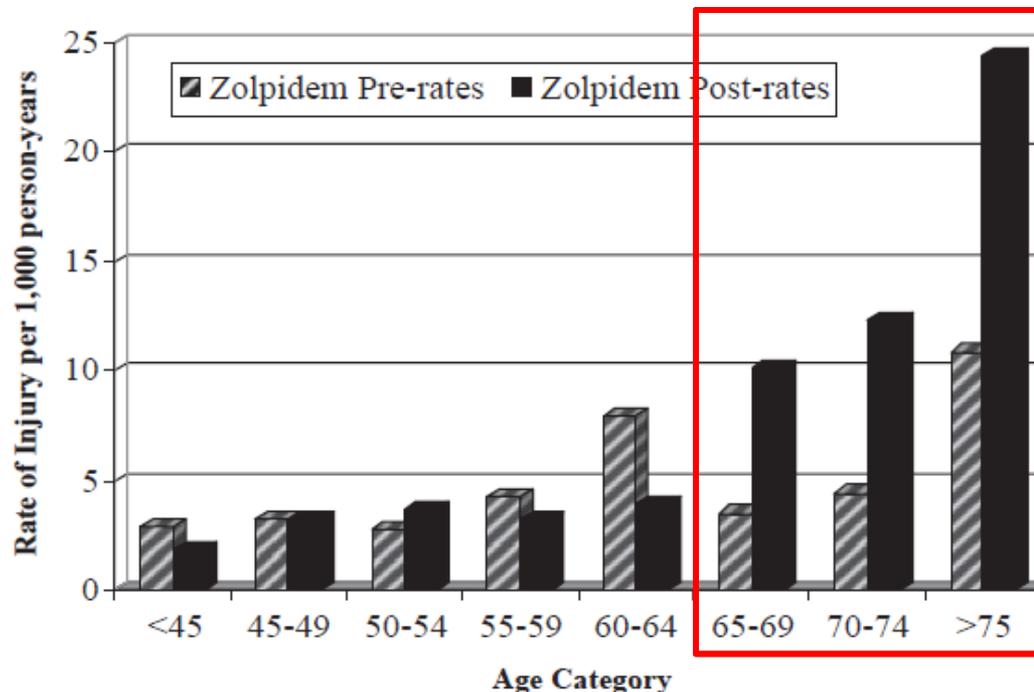
Studies included	Relative risk		
	Number of studies	RR (95% CI)	P-value
All studies	25	1.25 (1.17-1.34)	< 0.001
Studies with participants aged ≥65 years	18	1.26 (1.15-1.38)	< 0.001
Studies that used hip fractures as outcome	17	1.35 (1.22-1.50)	< 0.001
Studies with methodological quality score ≥7	17	1.23 (1.15-1.31)	< 0.001

The relative fracture risk was increased by **26 %** with participants aged ≥65 years.

# Are 'Z'-compounds (i.e. zopiclone, zolpidem and zaleplon) a safer alternative to BZDs?

Finkle WD et al., Risk of Fractures Requiring Hospitalization After an Initial Prescription for Zolpidem, Alprazolam, Lorazepam, or Diazepam in Older Adults, J Am Geriatr 2011

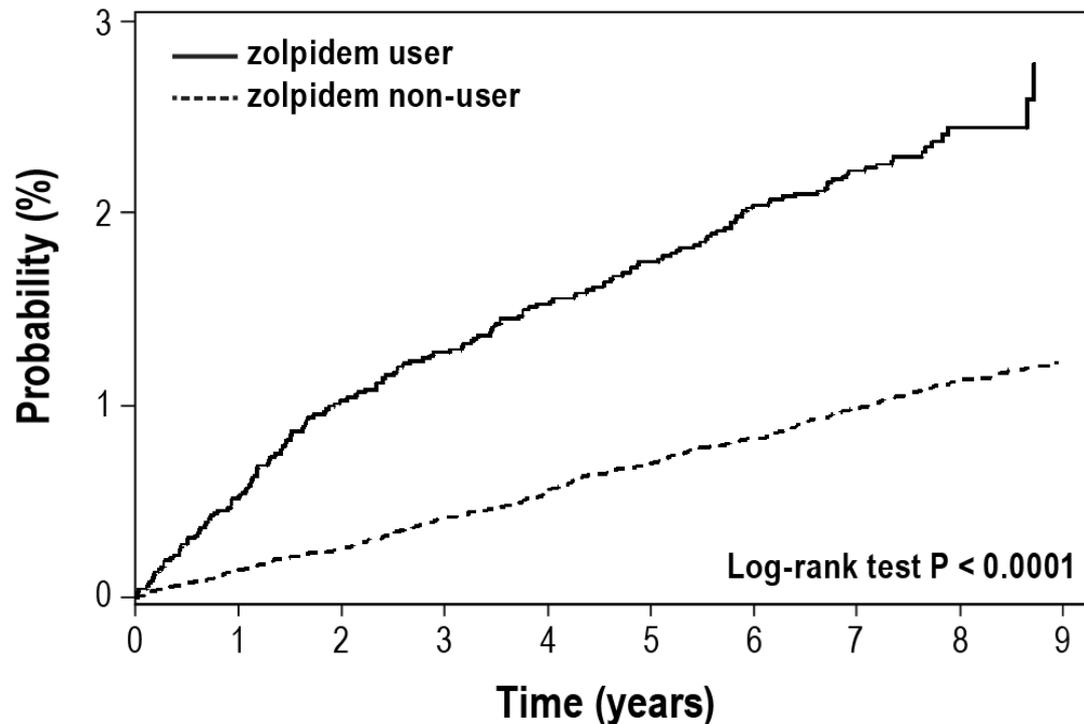
*Zolpidem has a short half life (approximately 2 hours), preserves sleep architecture, and is well tolerated.*



# The cumulative hip fracture probability is significantly higher for zolpidem users

Fang-Yu L et al., Retrospective Population Cohort Study on Hip Fracture Risk Associated with Zolpidem Medication, Sleep 2014

**6,978 patients newly prescribed** for zolpidem and 27,848 nonusers between 2000-2001



# Zolpidem is not a safer alternative to BZDs in older adults

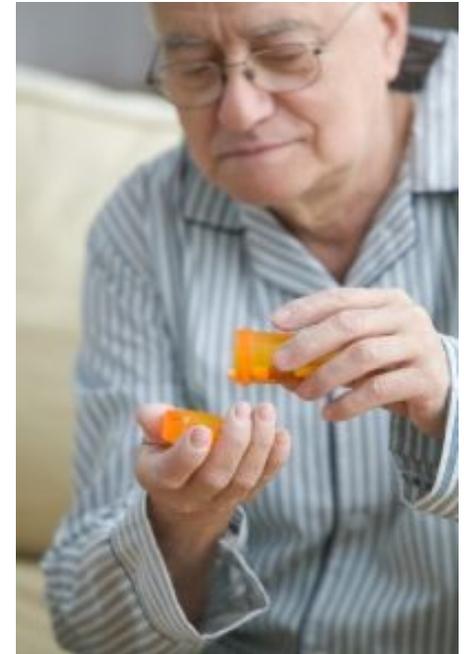
Adapted from Finkle WD et al., Risk of Fractures Requiring Hospitalization After an Initial Prescription for Zolpidem, Alprazolam, Lorazepam, or Diazepam in Older Adults, J Am Geriatr 2011

Between Jan 1, 1999 and Sept 30, 2009, Patients aged 65 and older

Fracture	Zolpidem	Alprazolam	Lorazepam	Diazepam
N	10,857	20,429	42,080	16,372
Adjusted N	-	14,939.9	29,793.8	10,150.0
<b>Nonvertebral</b>				
RR (95% CI)	<b>2.55</b> (1.78-3.65)	1.14 (0.80-1.64)	1.53 (1.23-1.91)	1.97 (1.22-3.18)
P-value	<0.001	0.42	<0.001	0.01
<b>Hip</b>				
RR (95% CI)	<b>3.11</b> (1.96-4.91)	1.46 (0.91-2.35)	2.05 (1.58-2.66)	2.03 (1.03-4.00)
P-value	<0.001	0.1	<0.001	0.04
	<b>Stilnox....</b>	<b>Xanax....</b>	<b>Loramet....</b>	<b>Valium....</b>

# Clinical Implications and Conclusion

- **Older adults have increased sensitivity to BZDs** and decreased metabolism of long-acting agents<sup>5</sup>.
- Despite their potential to increase in the elderly the **risk of falls, fractures, car crashes, delirium and cognitive impairment**, the use of BDZs remains high (~9%)<sup>5,6,7</sup>.



**BZDs and other sedative hypnotics are to be avoided** in the treatment of insomnia **in the elderly** because of their harms balanced with their transient efficacy.

5 The 2015 American Geriatrics Society Beers Criteria, J Am Geriatr Soc, 2015; 63(11):2227-46

6 Davidoff AJ et al., J Am Geriatr Soc 2015; 63(3):486-500

7 Olfson M et al., JAMA Psychiatry 2015; 72(2):136-42

# Top-5-list

The Swiss Society of General Internal Medicine recommends this Top-5 interventions to be avoided in hospital care:



- 1** Don't order blood tests at regular intervals (such as every day) or routine extensive lab panels including X-rays without specific clinical questions.
- 2** Don't place, or leave in place, urinary catheters for incontinence, convenience or monitoring of output for non-critically ill patients.
- 3** Don't transfuse more than the minimum number of red blood (RBC) units necessary to relieve symptoms of anemia or to return a patient to a safe haemoglobin range.
- 4** Don't let older adults lie in bed during their hospital stay. In addition, individual therapeutic goals should be established considering the patients' values and preferences.
- 5** Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium and avoid prescription at discharge.

Back up

The Swiss Society of General Internal Medicine recommends this Top 5 interventions to be avoided in ambulatory care:

**1**

Obtaining imaging studies during the first six weeks in patients with non-specific low back pain.

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**2**

Performing the Prostate Specific Antigen (PSA) test to screen for prostate cancer without a discussion of the risks and benefits.

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**3**

Prescribing antibiotics for uncomplicated upper respiratory tract infections.

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**4**

Obtaining preoperative chest radiography in the absence of a clinical suspicion for intrathoracic pathology.

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**5**

Continuing long-term treatment of gastrointestinal symptoms with proton pump inhibitors without titrating to the lowest effective dose needed.

# Top-5-Liste

Die Schweizerische Gesellschaft für Allgemeine Innere Medizin empfiehlt, folgende fünf Interventionen im stationären Bereich zu vermeiden:

**1** Keine umfangreichen Blut- oder Röntgenuntersuchungen in regelmässigen Abständen (z.B. täglich) ohne klinisch spezifische Fragestellung verordnen.

Viele Untersuchungen (wie z.B. Thoraxröntgen, arterielle Blutgasanalysen, klinische Chemie, Hämatogramme und EKGs) werden in regelmässigen Abständen (z.B. täglich) verordnet. Im Vergleich zu einem Vorgehen, bei welchem solche Tests nur zur Beantwortung von klinisch spezifischen Fragen oder zum Festlegen des weiteren Vorgehens dienen, erhöhen unnötige Routineverordnungen die Kosten der Gesundheitsversorgung ohne zusätzlichen Nutzen für den Patienten. Zudem können solche nicht-indizierten Untersuchungen auch Risiken und Nebenwirkungen in sich bergen, wie z.B. eine Anämie, oder weitere aufwendige Abklärungen von abnormen, klinisch jedoch nicht relevanten Befunden hervorrufen.

# One intervention which could help reducing unnecessary laboratory tests and phlebotomies

May TA et al., Reducing Unnecessary Inpatient Laboratory Testing in a Teaching Hospital, Am J Clin Pathol 2006

**Aim:** Minimize unnecessary phlebotomies and laboratory tests **by reconfiguring the electronic order function** to limit phlebotomy-laboratory test requests to occur singly or to recur within one 24-hour window

- **12% fewer inpatient tests**, of which 57.5% were related directly to decreases in the 5 most frequently ordered tests.
- **Reduction of phlebotomies by 20%.**
- Cost savings & new labor capacity

**Roadmap for the development of high-value care,  
cost-conscious practices**

# Top-5-Liste

Die Schweizerische Gesellschaft für Allgemeine Innere Medizin empfiehlt, folgende fünf Interventionen im stationären Bereich zu vermeiden:

**2** Keine Dauerkatheter bei Inkontinenz legen oder liegen lassen, wenn dies nur dem Komfort oder zur Überwachung des Urinvolumens bei nicht-kritisch kranken Patienten dient.

Katheter-assoziierte Harnwegsinfektionen sind die am häufigsten auftretenden im Spital erworbenen Infektionen. Die Verwendung von Blasenkathetern bei Inkontinenz oder aus Bequemlichkeit ohne konkrete Indikation und Angabe der Dauer erhöht die Wahrscheinlichkeit einer Infektion und geht mit einer erhöhten Morbidität und Mortalität und damit auch höheren Gesundheitskosten einher. Es wird empfohlen, dass Krankenhäuser und Pflegeeinrichtungen Richtlinien und Verfahren zu den entsprechenden Indikationen und den damit verbundenen Prozessen (inkl. Strategien für das Absetzen und Auswechseln der Katheter) entwickeln.

# Top-5-Liste

Die Schweizerische Gesellschaft für Allgemeine Innere Medizin empfiehlt, folgende fünf Interventionen im stationären Bereich zu vermeiden:

**3** Keine Transfusion von mehr als der minimal benötigten Menge Erythrozyten-Konzentrate verordnen, um Anämiesymptome zu lindern oder einen sicheren Hämoglobinwert zu erreichen. (7 g/dL für stabile Nicht-Herzpatienten; 8 g/dL bei stabilen Patienten mit vorbestehenden kardiovaskulären Erkrankungen)

Es wird die kleinstmögliche Transfusionsmenge empfohlen, da im Vergleich dazu liberale Transfusionsstrategien kein besseres Outcome erzielen. Unnötige Transfusionen erzeugen zudem unnötige Kosten und bergen Risiken für den Patienten. Die routinemässige Verabreichung von 2 Einheiten Erythrozyten sollte vermieden werden, wenn 1 Einheit ausreichend ist.

# Top-5-Liste

**Die Schweizerische Gesellschaft für Allgemeine Innere Medizin empfiehlt, folgende fünf Interventionen im stationären Bereich zu vermeiden:**

**4 Ältere Menschen während des Krankenhausaufenthalts nicht zu lange im Bett liegen lassen. Individuelle therapeutische Ziele sollten sich an den Werten und Präferenzen der Patienten orientieren.**

Über 65% der älteren Menschen, die initial ohne Einschränkung der Gehfähigkeit waren, verlieren diese zunehmend während eines Krankenhausaufenthalts. Die Mobilisation während des Krankenhausaufenthalts ist deshalb entscheidend für die Aufrechterhaltung der Funktionsfähigkeit bei älteren Menschen. Ein Verlust der Gehfähigkeit erhöht die Dauer des Krankenhausaufenthalts sowie die Notwendigkeit einer Rehabilitation, einer Platzierung im Pflegeheim sowie das Sturzrisiko während oder nach der Entlassung aus dem Krankenhaus; eine reduzierte Gehfähigkeit erhöht auch die Mortalität älterer Menschen.

Betruhe oder begrenzte Mobilität (wie z.B. häufiges Sitzen im Stuhl) während eines Krankenhausaufenthalts verursacht eine Dekonditionierung und ist einer der wichtigsten Faktoren für den Verlust der Gehfähigkeit bei hospitalisierten älteren Menschen. Ältere Menschen, die während des Krankenhausaufenthalts die Gehfähigkeit erhalten, werden früher aus dem Spital entlassen, sind mobiler und können selbstständiger ihren Tagesaktivitäten nachgehen; zusätzlich beschleunigt sich die Erholungsphase nach einer Operation.

# Top-5-Liste

**Die Schweizerische Gesellschaft für Allgemeine Innere Medizin empfiehlt, folgende fünf Interventionen im stationären Bereich zu vermeiden:**

**5 Älteren Menschen als erste Wahl keine Benzodiazepine, andere Beruhigungsmittel oder Hypnotika gegen Schlaflosigkeit, Unruhe oder Delirium verabreichen und das Rezeptieren solcher Medikamente bei Spitalaustritt vermeiden.**

Grosse Studien zeigen, dass sich das Risiko für Verkehrsunfälle, Stürze und Hüftfrakturen sowie für Hospitalisierungen oder Tod bei älteren Menschen mehr als verdoppelt, wenn Benzodiazepine oder andere Beruhigungs- oder Schlafmittel verordnet werden. Das Gesundheitspersonal sollte die potenziellen Gefahren der verschiedenen Behandlungsstrategien für Schlaflosigkeit, Unruhe oder Delirium bei älteren Patienten kennen. Die Anwendung von Benzodiazepinen sollte auf Alkoholentzugerscheinungen, Delirium tremens oder schwere generalisierte Angststörungen, die nicht auf andere Therapien ansprechen, beschränkt sein.

# Smarter Medicine in the Hospital

## Top-5 Recommendations

1. Don't order blood tests at regular intervals (such as every day) or routine extensive lab panels including X-rays without specific clinical questions.

2. Don't place, or leave in place, urinary catheters for incontinence, convenience or monitoring of output for non-critically ill patients.

3. Don't transfuse more than the minimum number of red blood cell (RBC) units necessary to relieve symptoms of anemia or to return a patient to a safe haemoglobin range (7 g/dL in stable non-cardiac patients and 8 g/dL in stable patients with pre-existing cardiovascular disease).

4. Don't let older adults lie in bed during their hospital stay. In addition, individual therapeutic goals should be established considering the patients' values and preferences.

5. Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium and avoid prescription at discharge.